

REMARKS

Claims 1, 4, 6, 8, and 24-26 are pending in this application. By this Amendment, claim 26 is added. Support for new claim 26 can be found at, for example, page 20, lines 16-19. No new matter is added. Applicants respectfully request reconsideration and prompt allowance of the pending claims in view of at least the following remarks.

The courtesies extended to Applicant's representative by Examiners Gugliotta and Tarazano at the interview held October 26, 2010 are appreciated. The reasons presented at the interview as warranting favorable action are incorporated into the remarks below, which constitute Applicants' record of the interview.

I. Rejections Under §103(a)

A. Rejection Over Ishihara, as evidenced by Shaffer, and Hamanaka

The Office Action rejects claims 1, 4, 6, 8, 24, and 25 under 35 U.S.C. §103(a) as having been obvious over EP 1251247 to Ishihara et al. (hereinafter "Ishihara"), as evidenced by U.S. Patent No. 4,904,625 to Shaffer, in view of WO 2002/074417 to Hamanaka et al. (hereinafter "Hamanaka"). The rejection is respectfully traversed.

As argued in the October 26 interview, Ishihara fails to disclose and would not have rendered obvious "a Young's modulus of the plugging material is lower than that of the cell wall, a porosity of the plugging material is 105% or more with respect to a porosity of the cell wall," as recited in claim 1. The Office Action asserts that Ishihara discloses a porosity of the cell wall is 55% and a porosity of the plugs is 70% (Table 1, Samples 7-9, and 13-15). Additionally, the Office Action asserts that Shaffer discloses a lower density, i.e., higher porosity, contributes to a lower Young's modulus and a higher thermal shock resistance (col. 3, lines 46-48). Thus, the Office Action asserts that "it stands to reason" that when the porosity of the plugging material is higher than that of the cell walls, the Young's modulus of the plugging material is lower than that of the cell walls.

Applicants respectfully submit that the Young's modulus of a material is not necessarily a function of the porosity of the material. In fact, other factors, such as particle size of the material and auxiliary agent, affect the Young's modulus. The current specification supports this position at page 12, lines 20-22, page 20, lines 13-16, and page 16, lines 19-23. Specifically, the current specification discloses that when the type or amount of pore forming agent is changed, the porosity, Young's modulus or strength of the plugging material can be controlled. As such, an ordinarily skilled artisan would not have understood that the higher porosity of the plugs in Ishihara would result in a lower Young's modulus of the plugs, as compared to the cell walls.

Additionally, Ishihara merely discloses controlling the porosity by adjusting the contents of components such as carbon powder, kaolin, talc, and aluminum hydroxide (paragraph [0028]). However, this disclosure only relates to the method of manufacturing an exhaust gas purifying filter, not plugging materials.

Finally, Ishihara discloses that when "a value M is less than 10, strength of the plugs is too low to be practically useful" (paragraph [0017]). However, Sample 7 of Ishihara (having a porosity of 70) can not practically be used according to Ishihara since its M value is 8, which is less than 10. Thus, if the Office Action's previous assertions are correct, samples (such as 8, 8, 15, 23, 24, 32, 33, 41, 42, 50, and 51- having a porosity of 70) can not also be used practically because the porosities of these samples are the same as sample 7. However, sample 8 has an M value of 16, sample 9 has an M value of 24, and sample 42 has an M value of 30. Thus, porosity alone is not a function of strength.

Thus, Ishihara fails to disclose and would not have rendered obvious "a Young's modulus of the plugging material is lower than that of the cell wall, a porosity of the plugging material is 105% or more with respect to a porosity of the cell wall," as recited in claim 1.

Hamanaka fails to cure the deficiencies of Ishihara. The Office Action fails to assert, and a review of the applied reference fails to reveal, any disclosure in Hamanaka as to the Young's modulus of the plugging material. Thus, Hamanaka fails to disclose and would not have rendered obvious "a Young's modulus of the plugging material is lower than that of the cell wall, a porosity of the plugging material is 105% or more with respect to a porosity of the cell wall," as recited in claim 1.

For at least these reasons, claim 1 is patentable over the combination of Ishihara, as evidenced by Shaffer, and Hamanka. Further, claims 4, 6, 8, 24, and 25 are patentable in view of the patentability of claim 1, as well as for the additional features recited therein. Accordingly, Applicants respectfully request withdrawal of the rejection.

B. Rejection Over Ichikawa, as evidenced by Shaffer, and Hamanaka

The Office Action rejects claims 1, 4, 6, 8, 24, and 25 under 35 U.S.C. §103(a) as having been obvious over U.S. Patent No. 5,595,581 to Ichikawa et al. (hereinafter "Ichikawa"), as evidenced by Shaffer, in view of Hamanaka. The rejection is respectfully traversed.

Ichikawa fails to disclose and would not have rendered obvious "a Young's modulus of the plugging material is lower than that of the cell wall, a porosity of the plugging material is 105% or more with respect to a porosity of the cell wall," as recited in claim 1. The Office Action asserts that Ichikawa discloses that the porosity of the sealing members is desired to be 110-140% of the porosity of the honeycomb structure (col. 2, lines 31-36). Additionally, the Office Action asserts that Shaffer discloses a lower density, i.e., higher porosity,

contributes to a lower Young's modulus and a higher thermal shock resistance (col. 3, lines 46-48). Thus, the Office Action asserts that "it stands to reason" that when the porosity of the plugging material is higher than that of the cell walls, the Young's modulus of the plugging material is lower than that of the cell walls. However, as discussed above, the Young's modulus of a material is not necessarily a function of the porosity of the material. As such, an ordinarily skilled artisan would not have understood that the higher porosity of the plugs in Ishihara would result in a lower Young's modulus of the plugs, as compared to the cell walls. Thus, Ichikawa fails to disclose and would not have rendered obvious "a Young's modulus of the plugging material is lower than that of the cell wall, a porosity of the plugging material is 105% or more with respect to a porosity of the cell wall," as recited in claim 1.

Hamanaka fails to cure the deficiencies of Ichikawa, as discussed above.

For at least these reasons, claim 1 is patentable over the combination of Ichikawa, as evidenced by Shaffer, and Hamanka. Further, claims 4, 6, 8, 24, and 25 are patentable in view of the patentability of claim 1, as well as for the additional features recited therein. Accordingly, Applicants respectfully request withdrawal of the rejection.

C. Rejection Over Hijikata, as evidenced by Shafer, and Ichikawa

The Office Action rejects claims 1, 4, 6, 8, 24, and 25 under 35 U.S.C. §103(a) as having been obvious over WO 2002/081880 to Hijikata, as evidenced by Shaffer, in view of Ichikawa. The rejection is respectfully traversed.

Hijikata fails to disclose and would not have rendered obvious "a Young's modulus of the plugging material is lower than that of the cell wall, a porosity of the plugging material is 105% or more with respect to a porosity of the cell wall," as recited in claim 1. The Office Action acknowledges that Hijikata fails to disclose these features; however, the Office Action asserts that the deficiencies of Hijikata are cured by the evidence of Shaffer and in view of Ichikawa.

As discussed above, Ichikawa and Shaffer fail to disclose and would not have rendered obvious "a Young's modulus of the plugging material is lower than that of the cell wall, a porosity of the plugging material is 105% or more with respect to a porosity of the cell wall," as recited in claim 1.

For at least these reasons, claim 1 is patentable over the combination of Hijikata, as evidenced by Shaffer, and Ichikawa. Further, claims 4, 6, 8, 24, and 25 are patentable in view of the patentability of claim 1, as well as for the additional features recited therein.

Accordingly, Applicants respectfully request withdrawal of the rejection.

II. New Claim

Applicants do not concede that any combination of the applied references disclose or would have rendered obvious the features recited in dependent claim 26. However, it is unnecessary to separately discuss the features recited in the dependent claim given the clear and distinguishing features in independent claim 1.

III. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Enclosures:

Petition for Extension of Time
Request for Continued Examination

Date: November 23, 2010

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